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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/784,867

02/23/2004

Ronald G. Fink

3859-101

9486

6449

7590

12/17/2010

ROTHWELL, FIGG, ERNST & MANBECK, P.C.

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SUITE 800

WASHINGTON, DC 20005

EXAMINER

MAYEKAR, KISHOR

ART UNIT

PAPER NUMBER

1759

NOTIFICATION DATE

DELIVERY MODE

12/17/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/784,867	<b>Applicant(s)</b> FINK ET AL.	
	<b>Examiner</b> Kishor Mayekar	<b>Art Unit</b> 1759	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23-57 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 and 34-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-21, 23-33 and 49-57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment of 1 October 2010 has been entered. Claims 1-17 and 34-48 stand withdrawn. Claims 18-20, 23-28, 33, 49-51 and 53-55 have been amended and claim 22 has been cancelled. New claims 56 and 57 have been introduced. Claims 18-21, 23-33 and 49-57 are pending in this application with claims 18 and 49 being independent claims.

### ***Claim Objections***

2. Claim 32 is objected to because of the following informalities: the typo error in the phrase "passing W light". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 18-21, 23, 24 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 2005/008549 A1) in view Goswami (US Pat. No. 5,933,702) and Kim (WO 02/102,497 A1), both secondary references in the last Office action. Hsu's invention is directed to a photocatalytic lamp. Hsu discloses in Fig. 5 the photocatalytic lamp comprising an UV light source configured to emit UV light in the 200-800 nm and a one piece catalytic target structure

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coupled to and substantially surrounding the UV light source, where the catalytic target structure includes the recited surfaces and a plurality of holes configured to allow passage of both surrounding gases and portions of the UV light through the catalytic target structure (p. 27). As to the reaction, Hsu discloses it in paragraph 4. With respect to claim 18, Hsu does not disclose the recited arrangement of the holes and the mechanic coupling of the target structure to the UV light source.

As to the first difference, Goswami teaches in an air cleaner with a photocatalyst the provision a catalytic coated structure surrounding a UV light source (Fig. 20) and the catalytic coated structure has square air passages (Fig. 14) or circular air passages (Fig. 15) where the air passages are arranged in rows. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the apparatus of Hsu such that the air passage of the catalytic target structure has circular air passages arranged in rows, as per the teaching of Goswami. One of ordinary skill in the art would have been motivated to make such modification because the selection of any of known equivalent air passages would have been within the level of ordinary skill in the art.

As to the second difference, Kim teaches in a device for air purification the arrangement of a photocatalytic structure around to a UV light source such that the UV light source is mounted between a pair of support and the photocatalytic target structure is supported by the pair of support with the UV light source positioned therein (p. 7, l. 29-35). The pair of the support reads on the recited mechanically coupled arrangement. As such the selection of any

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of known equivalent supports to commonly support Hsu's catalytic target structure and UV light source would have been within the level of ordinary skill in the art.

As to the subject matter of claim 24, Hsu's target catalytic structure would have the recited range of holes.

5. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu '549 as modified by Goswami '702 and Kim '497 as applied to claims 18-21, 23, 24 and 56 above, and further in view of Say et al. (US Pat. No. 6,063,343) and Miller (US 6,053,968), both references in the last Office action. The differences between the references as applied above and the instant claims is the provision of the recited fiber optic cable. Say teaches in a device for photocatalytic fluid purification the provision of sensors to warn a user of the non-operational UV light source where the sensor is a photodiode and may generate an automatic service notification such as a visual alarm (paragraph crossing c. 7 and 8). Miller teaches in a device for photocatalytic fluid purification the provision of an UV light status indicator of a fiber optic cable for indicating operational status of a UV light source (c. 5, l. 41-46). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Say and Miller because this would result in indicating the operational of the UV light source. The same is applied to claims 25 and 26 since Miller teaches that the indicator is optically shielded to prevent direct exposure to UV light.

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6. Claims 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu '549 as modified by Goswami '702 and Kim '497 as applied to claims 18-21, 23, 24 and 56 above, and further in view of Speer (US 6,315,963 B1), another reference cited in the last Office action teaches in a device for treating fluids via photolytic and photocatalytic reactions the limitation (c. 8, l. 16-18 and 30-36). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Speer because this would protect the UV light source from the fluid.

7. Claims 49-52 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu '549 in view of Goswami '702 and Kim '497, Say '343 and Miller '968, for the same reasons as stated in the preceding paragraphs #4 and #5 above.

As to the subject matter of claim 52, Kim teaches the provision of a power supply for applying power to the UV light source and a switch to control the power supply (page 3, 2<sup>nd</sup> and 3<sup>rd</sup> full paragraphs). Say teaches in examples different input power. As such, it appears that the power supply of Kim or Say is adjustable.

8. Claims 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu '549 in view of Goswami '702 and Kim '497, Say '343 and Miller '968 as applied to claims 49-52 above, and further in view of Schaible et al. (US 6,972,415 B2), another reference cited in the last Office action. The differences between the references as applied above and the instant claims

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are the limitation recited in each of the instant claims. Schaible teaches in a system for treating fluid with UV light the limitations (Fig. 1). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the references' teachings as shown by Schaible because the selection of any of known equivalent sensor arrangements would have been within the level of ordinary skill in the art.

### ***Response to Arguments***

9. Applicant's arguments filed 1 October 2010 have been fully considered but they are not persuasive because of the new grounds of rejections as set forth in the paragraphs above.

### ***Conclusion***

10. Claims 18-21, 23-33 and 49-57 are rejected.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a)

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will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kishor Mayekar/  
Primary Examiner, Art Unit 1759